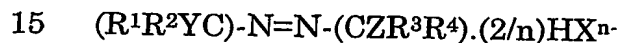


Claims

1. Polymerisation initiator system, comprising a water-soluble container and a water-soluble azo-initiator inside the container.
2. Polymerisation initiator package according to claim 1, wherein the water-soluble container is a bag.
- 5 3. Polymerisation initiator system according to claim 1 or 2, wherein the container is made of a water-soluble polymer.
4. Polymerisation initiator system according to claim 3, wherein the water-soluble polymer is a water-soluble cellulosic polymer or polyvinylalcohol.
5. Polymerisation initiator system according to claim 3 or 4, wherein
- 10 the container is an extruded container.
6. Polymerisation initiator system according to any one of the preceding claims, wherein the azo-initiator is selected from the group consisting of compounds represented by the formula

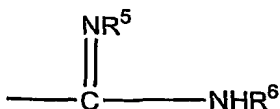


Formula I

wherein

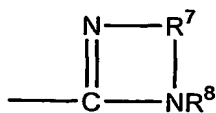
$R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$  each represent the same or a different alkyl group or cycloalkyl group

- 20 Y and Z each represent the same or a different group represented by the formula



Formula II

or



Formula III

5  $\text{R}^5$  is a hydrogen atom or an optionally substituted alkyl, allyl or phenyl group

$\text{R}^6$  is a hydrogen atom or an optionally substituted alkyl or phenyl group

$\text{R}^7$  is an optionally substituted alkylene group

$\text{R}^8$  is a hydrogen atom or a hydroxyalkyl group

10 X is a anion, wherein n represents its valence, and X is preferably a monovalent anion, more preferably chloride, bromide or acetate.

7. Polymerisation initiator system according to claim 6, wherein the the azo-initiator is 2,2'-Azobis(2-amidinopropane), 2,2'-azobis[2-(2-imidazolin-2-yl)propane] or a salt thereof

15 8. Polymerisation initiator system according to any one of the preceding claims, wherein the amount of azo-initiator in the container is in the range of 1 g to 25 kg, preferably of 100 to 10 kg.

9. Polymerisation initiator system according to any one of the preceding claims, wherein the container comprises at least one component  
20 selected from the group consisting of anti-foaming agents and diluent materials.

10. Method of polymerisation, comprising adding a container comprising an initiator to a polymerisation system and dissolving the initiator and container in the polymerisation system.

25 11. Method according to claim 10, wherein the polymerisation system is an emulsion polymerisation system or a solution polymerisation system.

12. Method according to claim 10 or 11, wherein the polymerisation system is an aqueous polymerisation system.

13. Method according to any one of the claims 10-12, wherein the polymerisation system comprises at least one monomer selected from the group consisting of acrylic acid, acryl amide, acrylesters (*e.g.* ethyl acrylate), vinyl acetate, acetonitrile and styrene, preferably from the group consisting of acrylic acid and acryl amide.
14. Method according to any one of the claims 10-13, wherein the container and initiator are added in the form of a polymerisation initiator system as defined in any one of the claims 1-9.
15. Method for preparing a polymerisation initiator system according to any one of the claim 1-9, wherein the water-soluble azo-initiator is introduced into the water-soluble container, after which the container is sealed.
16. Method for handling a polymerisation initiator system according to any one of the claims 1-9, wherein the system is transferred from a polymerisation initiator system manufacturing site to a polymer production site and integrally introduced into a polymerisation reactor.